IN THE CLAIMS

1.   (Currently amended) A method of detecting defective markings on a semiconductor product, said method comprising:

inputting a reference character set corresponding to a semiconductor product to be tested;

extracting one or more image features of actual character markings from the semiconductor product;

using an optical character recognition technique for recognizing each character in the actual character markings as a character[[s]] selected from a plurality of predefined characters using one or more of the extracted image features to produce character data that corresponds to the selected character; [[and]]

if at least one of the characters is not recognized, determining the actual character markings to be defective; and

if all of the characters are recognized, comparing the character data to the characters in the reference character set;

if there is not a substantially exact match, determining the actual character markings to be defective; and

if there is a substantially exact match, determining the actual character markings to be good.

2.   Cancelled.

3.   (Original) A method according to claim 1, wherein inputting a reference character set comprises directly inputting the reference character set.

4.   (Original) A method according to claim 3, wherein directly inputting the reference character set comprises using a keyboard to directly input characters corresponding to the reference character set.

5.   (Original) A method according to claim 1, wherein inputting the reference character set comprises scanning a bar code, said bar code having information, including the reference character set, embedded therein.

6.   (Original) A method according to claim 1, wherein the reference character set is recorded on a lot card.

7.   (Original) A method according to claim 1, further comprising reading actual character markings of the product comprises using a Charge-Coupled Device (CCD) camera or a scanner to obtain an image of the character markings.

8.   Cancelled.

9.   (Currently amended) A method of detecting defective character markings on a semiconductor product following assembly thereof, said method comprising:

inputting and storing a reference character set corresponding to the semiconductor product;

testing external terminals of said semiconductor product;

reading actual marking characters of the product as a character image;

using an optical character recognition technique for recognizing each character in the character image as characters selected from a plurality of predefined characters to produce character data that corresponds to the selected character

if at least one of the characters is not recognized, determining the actual character markings to be defective;

if all of the characters are recognized, comparing the character data to the characters in said reference character set to detect defective product markings; and

if there is not a substantially exact match, determining the actual character markings to be defective;

if there is a substantially exact match, determining the actual character markings to be good; and

selectively unloading good products and defective products based on the [[detecting]] determined result.

10.   (Original) A method according to claim 9, wherein converting the character image into character data is performed using an Optical Character Recognition (OCR) technique.

11.   (Original) A method according to claim 9, wherein the semiconductor products are provided to a testing unit in a lot.

12.   (Original) A method according to claim 9, wherein the reference character set is recorded on a lot card.

13.   (Original) A method according to claim 12, wherein the reference character set from the lot card is directly input using a keyboard.

14.   (Original) A method according to claim 12, wherein the reference character set is recorded in a bar code and wherein the reference character set is input by scanning the bar code.

15.   (Currently amended) A method of detecting defective markings on a semiconductor product that has already been assembled and subjected to a visual test, said method comprising:

inputting a reference character set that represents proper character markings of the semiconductor product;

storing the reference character set in memory;

providing the semiconductor product to a testing unit in a loading tray;

transferring the product onto a carrier tape;

reading actual character markings of the product as a character image;

converting the character image into character data by recognizing the character image as a set of characters using an Optical Character Recognition (OCR) technique;

if there is a failure to recognize at least a portion of the character image, determining the actual character markings to be defective;

if all of the character image is recognized, comparing the character data to said reference character set to detect defective product markings; and

if there is not a substantially exact match, determining the actual character markings to be defective;

if there is a substantially exact match, determining the actual character markings to be good;

unloading products with defective markings onto an unloading tray.

Docket No. 9903-041   Page 4 of 9   Application No. 10/027,639

16.   (Original) A method according to claim 15, wherein the reference character set is inputted by scanning a bar code on a lot card.

17.   (Original) A method according to claim 15, wherein the reference character set is input using a keyboard.

18.   (Currently amended) An apparatus for detecting defective markings on a semiconductor product, said apparatus comprising:

an input unit for inputting a reference character set corresponding to a semiconductor product to be tested;

a memory unit configured to store the reference character set;

a readout system configured to read actual markings of the product to be tested as a character image;

an Optical Character Recognition (OCR) unit configured to recognize the character image as an actual character set; ~~and~~

an arithmetic unit configured to compare the actual character set to the reference character set; and

an unloading unit for receiving product having actual character markings that the OCR unit failed to recognize and product having an actual character set that does not substantially exactly match the reference set; and

an unloading unit for receiving product having actual character markings that substantially exactly matched the reference set.

19.   (Original) An apparatus according to claim 18, wherein the input unit comprises a keyboard configured to permit a user to directly input the character row into the apparatus.

20.   (Original) An apparatus according to claim 18, wherein the input unit comprises a scanner configured to input the character row by scanning a bar code.

21.   (Original) An apparatus according to claim 18, wherein the readout system comprises a Charge-Coupled Device (CCD) camera or a scanner.

Docket No. 9903-041   Page 5 of 9   Application No. 10/027,639

22.   Cancelled.

23.   (Original) An apparatus according to claim 18, further comprising an external terminal testing unit configured to test external terminals of the semiconductor product.

24.   (Original) An apparatus according to claim 18, further comprising a loading tray and a carrier tape, wherein the apparatus is configured to transfer the product to be tested from the loading tray to the carrier tape before the character image is obtained by the readout system.

25.   (Currently amended) A method of detecting defective markings on a semiconductor product, said method comprising:
        extracting one or more image features of actual character markings from the semiconductor product; and
        using an optical character recognition technique for recognizing each character in the actual character markings as a character[[s]] selected from a plurality of predefined characters using one or more of the extracted image features;
        comparing the character data to the characters in a reference character set;
        if there is not a substantially exact match, determining the actual character markings to be defective; and
        if there is a substantially exact match, determining the actual character markings to be good.

26.   (Currently amended) A method according to claim 25, further comprising classifying the product as defective if one or more of the characters in the actual character markings cannot be recognized as a character.

27.   (Previously presented) A method according to claim 9 wherein testing the external terminals of the semiconductor product is performed at substantially the same time as reading the actual marking characters of the product as the character image.